

PRECISION TEST EQUIPMENT



E-400



E-200C

MODEL E-200-C DELUXE SIGNAL-MARKER GENERATOR

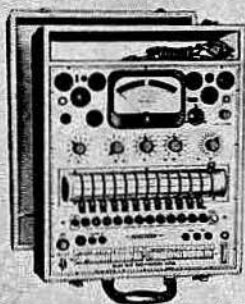
- For Lab & Serveshop
- 9 Easy-Reading Bands
- Accuracy to 1%

Highly sensitive, deluxe-signal-marker generator. Valuable aid for television alignment and servicing of AM and FM sets. 9 bands: 88 kc to 240 mc; to 60 mc on fundamentals. Accuracy to 1%. Outputs: Unmodulated RF; 400-cycle modulated RF; and 400-cycle sine wave. Control for variable internal modulation, 0-100%. $6\frac{1}{2}$ " direct reading dial with 0-100 vernier scale. Supplies 0-50 volts AVC-AGC voltage. Handsome blue-gray finish. With coax cable, "LO-HI" connectors, and illustrated manual "Servicing by Signal Substitution". Deluxe hooded cabinet. $11\frac{1}{2} \times 13 \times 6\frac{1}{2}$ ". For 110-120 v., 50-60 cycle. Shpg. wt., 17 lbs. 87 FZ 000. NET.....93.10

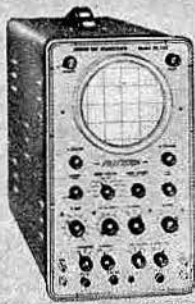
MODEL ES-550 DELUXE 5" OSCILLOSCOPE

Excellent for servicing and lab work, including color TV; provides 5-mc bandwidth. Push-pull vertical amplifier has 10 mv/inch sensitivity; response within 1 db, 10 cps to 3.5 mc; (3 db at 5 mc). Push-pull horizontal amplifier rated 100 mv/inch sensitivity; response within 1 db, 20 cps to 1 mc (3 db at 2 mc). Sweep frequency, 10 cycles to 100 kc; also 30 and 7875 cycles synchronized sweep. Negative and positive internal sweep. Vertical pattern reverse switching. Direct reading, peak-to-peak voltage calibrator. $8\frac{1}{2} \times 14\frac{1}{2} \times 18\frac{1}{2}$ ". For 110-120 volts, 50-60 cycle AC. Wt., 47 lbs. 87 FZ 002. NET.....230.30

MODEL SP-5 PROBE SET. 4 probes (high-Z low-capacity, crystal, isolating, shielded); coax cables; connectors. For use with above scope. Shpg. wt., 3 lbs. 84 F 491. NET.....25.97



10-12-P



ES-550



E-420



SS-10

MODEL E-400 DELUXE SWEEP GENERATOR

Deluxe portable sweep generator for television and FM servicing. Frequency range is 3-900 mc; to 240 mc on fundamentals; saves time on front-end alignment—read directly on panel dial. Has narrow and wide-band sweep—frequency widths: 0-1 mc and 0-15 mc. Built-in base-line reference. Self-contained multiple crystal marker-calibrator. Supplied with 2 crystals (2 mc and 4.5 mc). Special socket accommodates 4 crystals. Full vision, $6\frac{1}{2}$ -inch dial. Phasing control. Internal retrace blanking circuit simplifies alignment—eliminates return traces. Supplied complete with test cables, tubes, comprehensive instruction manual, and 2 crystals. In custom-styled, handsome blue-gray, hooded steel cabinet; two-color satin brushed aluminum panel and contrasting dark blue control knobs. Deluxe cabinet, $11\frac{1}{2} \times 13 \times 6\frac{1}{2}$ ". For operation from 110-120 volts, 50-60 cycle AC. Wt., 24 lbs. 87 FZ 001. NET.....156.80

MODEL E-420 DELUXE DOT AND BAR GENERATOR

Highly versatile white-dot and bar generator for color TV adjustment. Ideal unit for checking color convergence and vertical and horizontal linearity. Has separate controls to adjust the number and thickness of both vertical and horizontal bars. Provides direct video and modulated TV channel outputs. Has RF channel selector for channels 2 to 6. Generates: White dots, vertical and horizontal bars and cross-hatch pattern. Number and size of dots can be varied. In beautiful, custom-styled, blue-gray, hooded steel cabinet and four-color, satin-brushed aluminum panel with contrasting dark blue control knobs. With cables and instructions. Size, $13 \times 11\frac{1}{2} \times 6\frac{1}{2}$ ". For operation from 110-120 volt, 60 cycle AC. Shpg. wt., 19 lbs. 87 FZ 021. NET.....147.00

MODEL 10-12-P DELUXE ELECTRONAMIC TUBE TESTER

Here's a deluxe tube tester—ideal for use as a portable or counter-type unit. Dynamically checks mutual conductance plus other characteristics of modern radio and television tubes including sub-miniatures and acorns; wired to handle tubes up to 12 pins. Built-in stainless steel pin straighteners. Has direct facilities for battery (A, B, and C dry batteries under load conditions), ballast, pilot bulb and capacitor testing. Large, easy-to-read $5\frac{1}{4}$ " meter; accuracy within 2%. Double-window, roll chart has space for adding new tube data. Convenient portable model in hardwood case. Handsome, two-color, satin-brushed aluminum panel and contrasting dark blue control knobs. Hardwood cabinet has convenient tool compartment and hinged, removable cover. Size, $17\frac{1}{4} \times 13\frac{1}{4} \times 6\frac{1}{4}$ ". For 110-120 volts, 50-60 cycle AC. Shpg. wt., 24 lbs. 87 FZ 009. NET.....126.42

MODEL PTA CATHODE-RAY-TUBE ADAPTER. For all Precision tube testers. Wt., 1 lb. 84 F 492. NET.....7.59

MODEL SS-10 FILAMENT & CONTINUITY TESTER

Handy, compact, battery-operated tube tester. Highly versatile—designed to test for burned-out tube filaments, fuses, and pilot lamps (both bayonet and screwbase). Also checks for continuity in transformer windings, appliances, etc. Has test sockets for octal, locat, and miniature 7 and 9 pin tubes. Also tests filaments in television picture tubes. Built-in tube pin straighteners for miniature 7 and 9 pin tubes. Includes internal battery life test. Custom-molded case with gold and black anodized panel. Supplied complete with batteries. Size, $5\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ ". Shpg. wt., 1 lb. 87 F 026. NET.....6.37

660



- Easy-to-Read $5\frac{1}{4}$ " Meter
- $\pm 2\%$ Accuracy
- Tests Modern TV, FM, & AM Tubes
- Picture Tube Beam Current Test

MODEL 660 TUBE AND TRANSISTOR TESTER

Introducing an all-new, highly versatile tube and transistor tester. Has provisions for measuring the reverse current between collector and base with emitter open (Icbo), shorts and leakage on all RF, audio, power and tetrode transistors—both NPN and PNP types. Also provides cathode conductance test for receiving type tubes. Has special circuit for testing picture producing beam current on all TV picture tubes when used with Model PTA Cathode Ray Adapter (above, right column). Rugged 24-position rotary selector switch controls filament voltages from $\frac{1}{4}$ to 117 volts. $5\frac{1}{4}$ " meter; accuracy to $\pm 2\%$. Smooth action, 3-window roll chart has "Tube Finder" feature. Leatherette-covered carrying case with handy tool compartment. $18 \times 10\frac{1}{2} \times 6\frac{1}{4}$ ". For operation from 110-120 v., 50-60 cycle AC. Shpg. wt., 16 lbs. 87 FX 028. NET.....97.51

MODEL 640 CATHODE CONDUCTANCE TUBE TESTER

New, moderately priced cathode conductance tube tester. Checks for merit, leakage and short tests on TV, FM and AM tubes. Designed to test each section of multi-section and ballast resistor-type tubes. Smooth action, 24-position rotary switch controls filament voltages from $\frac{1}{4}$ to 117 volts—reduces obsolescence as new tubes are released. Has handy built-in 7 and 9-pin straighteners. Easy-to-read $5\frac{1}{4}$ " meter accurate to $\pm 2\%$.

High-speed, 3-window roll chart saves valuable time—locates desired reference easily, quickly with "Tube Finder" feature. Comes complete with leatherette-covered, solidly constructed carrying case. Attractive, etched, satin-brushed aluminum panel. $18 \times 10\frac{1}{2} \times 6\frac{1}{4}$ ". For 110-120 v., 50-60 cycle AC. Shpg. wt., 16 lbs. 87 FX 027. NET.....77.91

PRECISION TEST EQUIPMENT

98-MCP



MODEL 98-MCP DELUXE VTVM

Economically priced, highly accurate, deluxe laboratory type VTVM. Has an easy-to-read 7" meter with 200-microampere sensitivity; accuracy $\pm 2\%$. Ranges: Zero-center DC, AC rms and DC volts, 0-1.2-6-12-60-300-1200. P-P AC volts, 0-3.2-16-32-160-800-3200. Zero-center DC input resistance, 26.6 megohms. Resistance, 0-1000-100,000 ohms; 0-1-10-100-1000 megohms. DC current, 0-300 microamperes; 0-1.2-6-30-120-600 ma; 0-1.2-12 amps. 6 db ranges, -20 to +63 db. In custom-styled, hooded metal cabinet with brushed aluminum panel. Size, $11\frac{1}{2} \times 13 \times 6\frac{1}{2}$ ". Supplied complete with 3-way probe and instruction manual. For operation from 110-120 volts, 60 cycle AC. Shpg. wt., 18 lbs.

87 FZ 014. NET. 117.11

MODEL TV-8 SUPER-HIGH VOLTAGE PROBE. Excellent accessory for Model 88 or 98 VTVMs. Extends DC voltage range to 60,000 v. Shpg. wt., 2 lbs.

84 F 681. NET. 14.45

MODEL RF-10A HIGH-FREQUENCY PROBE. For above VTVM. Extends response to 300 mc. Shpg. wt., 2 lbs.

84 F 419. NET. 14.11

MODEL 110 MULTIMETER

Highly useful, expertly constructed pocket-size VOM. Combines full-range instrument performance with small-sized convenience. Valuable aid to the radio-TV serviceman. Easily fits into tube caddy or tool kit—"on-hand" at all times. Ideal for field use, service calls, etc. Ranges: DC volts, 0-1.5-6-30-150-600-3000 (20,000 ohms per volt); AC volts, 0-1.5-6-30-150-600-3000 (5000 ohms per volt); DC current, 0-60-600 microamps and 0-6-60-600 ma; resistance, 0-2000-200,000 ohms and 0-20 megohms; db, from -20 to +70. $3\frac{1}{2}$ " meter with long, easy-reading scales; sensitivity 50 microamps. Full scale accuracy $\pm 2\%$. Supplied complete with vinyl-plastic cover; heavy-duty, banana-plug test leads; and batteries. Size, $5\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{8}$ " deep. Shpg. wt., 3 lbs.

87 F 023. NET. 33.81

MODEL 107 ULTRA-COMPACT PORTABLE TUBE TESTER

- Provides Thorough Checking of Wide Range of Tube Types
- Extremely Compact; Weighs Only 11 $\frac{1}{4}$ Lbs.
- Simple, Fast, Accurate Operation For Positive Checking

Remarkably compact, precision tube tester. Provides all essential tests for wide range of tube types, including sub-miniature types. "Good-Bad" meter shows results of dynamic mutual conductance test and cathode emission test; electron-eye indicates "control-grid-emission" test. Also checks for filament continuity, element leakage, open elements, and gassiness. Only $6\frac{1}{2} \times 9\frac{1}{2} \times \frac{1}{2}$ ". Weight is only a fraction over 11 pounds! Handy "flip-chart" tube index. For 110-120 volts, 60 cycle AC. Shpg. wt., $14\frac{1}{2}$ lbs.

87 FX 295. NET. 136.71

MODEL GCT-5 GRID CIRCUIT TUBE TESTER

Exceptionally lightweight, highly compact, grid circuit tube tester. Has 7 wired sockets for testing receiving type tubes with filament voltages from 3 to 12 volts. Check: Control grid emission; grid-to-cathode shorts; cathode-to-heater shorts; gassy tubes. Has "Magic Eye" Bad-OK-Bad indicator. Size, $6\frac{1}{2} \times 6\frac{1}{2} \times 2\frac{1}{2}$ ". For operation from 110-120 volts, 50-60 cycle AC. Shpg. wt., 4 lbs.

84 F 639. NET. 29.35

Express Shipment Recommended for Test Equipment



110



88



68



120

MODEL 68 VTVM

Highly dependable AC-operated VTVM for all radio and television servicing requirements. Accurate, and versatile—has many uses for inspection work and other industrial applications. Has 5 zero-center ranges for FM discriminator balancing, voltage polarity determinations, etc. Large, $5\frac{1}{2}$ " wide-angle meter with 400 microamperes sensitivity. Accuracy, $\pm 2\%$. Multiplier resistors are rated within $\pm 1\%$. High input resistance of 13.3 megohm on DC ranges. DC volts, 0-3-12-60-300-1200. Resistance 0-1000-100,000 ohms; 0-1-100-1000 megohms. AC volts, 0-3-12-60-300-1200. Peak-to-Peak volts, 0-8-32-160-800-3200.

Convenient, built-in carrying strap. Handsome blue-gray ripple steel cabinet with brushed aluminum panel. Overall size, $5\frac{1}{2} \times 7\frac{1}{2} \times 3\frac{1}{2}$ ". Supplied complete with battery and convenient 3-way coaxial probe. For operation from 110-120 volts, 60 cycle AC. Shpg. wt., 9 lbs.

87 F 018. NET. 53.41

MODEL 88 VTVM

Highly sensitive vacuum tube voltmeter for laboratory and service-shop use. Employs full-bridge VTVM circuit with 1% multipliers and shunts for extremely accurate readings. Extra-large, wide-angle $5\frac{1}{2}$ " meter with easy-to-read, 3-color scales. 200 microamp sensitivity, $\pm 2\%$ accuracy.

Reads AC rms in 6 ranges: 0-1.2-6-12-60-300-1200 volts. 6 peak-to-peak AC volt ranges: 0-3.2-16-32-160-800-3200. 5 resistance ranges: 0-1000-10,000 ohms; 0-1-100-1000 megohms. 6 zero-center DC ranges: 1200-300-60-12-6-1.2-0.12-0.06-0.03-0.015 volts with $26\frac{2}{3}$ meg input resistance. Also 6 -DC volt and 6 +DC volt ranges: 0-1.2-6-12-60-300-1200, with $13\frac{1}{3}$ meg input resistance. In compact, custom-molded phenolic case; with convenient, sure-grip carrying strap. Overall size, $5\frac{1}{2} \times 7\frac{1}{2} \times \frac{1}{2}$ ".

Complete with detachable AC line cord, internal ohmmeter battery, three-way coaxial VTVM probe. For operation from 110-120 volts, 50-60 cycle AC. Wt., 8 lbs.

84 F 680. NET. 73.01

MODEL 120 MULTI-RANGE TESTER

- Low-Cost, Highly Versatile
- 20,000 Ohms/Volt DC Sensitivity
- Covers 36 Ranges

Highly sensitive VOM. Has more ranges than most meters of its type and size. Ranges: AC, DC, and output volts, 0-1.2-3-12-60-300-600-1200-6000 with 5000 ohms per volt on AC and 20,000 ohms per volt on DC; DC current, 0-60-300 μ a, 0-1.2-12-120-600 ma, 0-12 amps; resistance, 0-200-2000-200,000 ohms, 0-2-20 megohms; 8 db ranges, -20 to +77.5 dB. Complete with batteries and test leads. Size, $5\frac{1}{2} \times 7 \times 3\frac{1}{2}$ ". Shpg. wt., 5 lbs.

84 F 490. NET. 44.05

MODEL LC-3 LEATHER CASE. For Model 120. Top-grain cowhide. Shpg. wt., 3 lbs.

84 F 496. NET. 9.31

MODEL TV-2B HV PROBE. For Model 120. Extends DC range to 30,000 v. Wt., 2 lbs.

84 F 495. NET. 14.45

MODEL ST-1 RETRACTABLE STAND. For Models 88, 120. Convenient 45-degree table mount. Shpg. wt., 1 lb.

87 F 020. NET. 98.00

MODEL 78 BATTERY VTVM

Battery powered VTVM—can be used anywhere. $5\frac{1}{2}$ " meter—rated at 100 microamperes sensitivity, $\pm 2\%$ accuracy. Multipliers rated for $\pm 1\%$ accuracy. High input resistance—13.3 megohms on all DC ranges. Extra-high input impedance on AC ranges—8 megohms, 67 mmf. Ranges: Resistance, 0-1000-100,000 ohms; 0-1-100-1000 megohms. Zero-center DC volts, 0-1.5-6-30-150-600-1500. AC volts (rms), 0-3-12-60-300-1200. Resistors are deposited-film and wire-wound types. Blue-gray ripple case, $5\frac{1}{2} \times 7\frac{1}{2} \times 3\frac{1}{2}$ ". Complete with batteries and probe. Shpg. wt., 9 lbs.

87 F 019. NET. 61.25

MODEL TV-4 HIGH-VOLTAGE PROBE. For Models 68 or 78 VTVM's listed in center column and above. Extends DC voltage range to 60,000 volts. Shpg. wt., 2 lbs.

84 F 445. NET. 14.45

SECO TEST EQUIPMENT



107



GCT-5